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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
RIOS CUEVAS, ROBERTO JOSE	
ART UNIT	**PAPER NUMBER**
2836	

DATE MAILED: 03/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/777,988	NERONE ET AL.	
	Examiner	Art Unit	
	Roberto J Rios	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 February 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Schneider et al (US patent 5,365,154).

As per claim 1, Schneider et al (herein after Schneider) teach an electrical power conversion system comprising: a load receiver (12) for powering and controlling loads, said load receiver comprising: a decoupler for decoupling a communication signal from an electrical power bus (Figure 1A continued), said communication signal containing encoded load information, wherein the decoupler electrically isolates the communication signal from the power signal; a data receiver for receiving the communication signal from the decoupler and deriving data therefrom; a data decoder for decoding data received from the data receiver and converting it to a converter signal according to the encoded load information (Figure 1A continued; col. 6, line 32+); and a power converter for receiving the converter signal from the data decoder, wherein the power converter converts an electrical power bus input of a first voltage into a power output at a second voltage for powering the loads (col. 14, lines 28-47).

As per claim 2, Schneider teaches a load transmitter for transmitting encoded load information in a communication signal onto the electrical power bus, said load

transmitter comprising: a data encoder for encoding load information into data; a data transmitter for receiving the data from the data encoder and transmitting a communication signal', and a coupler for receiving the communication signal from the data transmitter and coupling the communication signal onto the electrical power bus (col. 13, line 47+).

As per claims 3 and 4, Schneider teaches the load information contains load state and load address information; and further wherein the power converter sets the state of the load according to the converter signal when the power converter is powering the load associated with that load address (col. 16, line 65).

3. Claims 19 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Vig (US patent 4,791,311).

As per claim 19, Vig teaches an electrical power conversion system comprising: a power converter (36) connected to an electrical power bus (14) that provides DC current, said power converter for converting the bus voltage into a load voltage (3.2V) different from the bus voltage, said load voltage for powering a load (38); and a data receiver for receiving an encoded communication signal from the electrical power bus, said encoded communication signal including encoded load information for controlling an operation of said power converter (col. 3, line 21-50).

As per Claim 20, Vig teaches a data decoder for decoding the encoded communication signal and converting it to a control signal for said controlling an operation of said power converter, wherein said controlling is done according to said load information (col. 3, line 21-50).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneider in view of Rotem (US patent 6,570,493).

As per claim 5, Schneider teaches transmitting information to a load receiver but does not specifically disclose the load receiver encoding return load data and transmitting said return load data back to the power bus. However, Rotem teaches a load receiver unit encoding return load data and transmitting said return load data back to the power bus to implement a bi-directional communication network (claim 10).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Schneider load receiver unit with Rotem bi-directional communication system for the purpose of transmitting a switch controller load status information.

As per claim 6, Schneider teaches the load information contains load state and load address information; and further wherein the power converter sets the state of the load according to the converter signal when the power converter is powering the load associated with that load address.

6. Claims 7-14, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Normann (US patent 5,821,632) in view of Tamai et al (US patent 6,459,170).

As per claim 7, Normann al (herein after Normann) teach an electrical power/data system comprising: a load receiver (Figure 1) for powering and controlling loads, said load receiver comprising: a communication signal containing encoded load information (col. 9, line 30); a data receiver for receiving the communication signal and deriving data therefrom; a data decoder for decoding data received from the data receiver and converting it to a control signal according to the encoded load information and powering a load based on said control signal (Figure 1; col. 7, line 33+). Normann does not specifically disclose a power converter for receiving a control signal from the data decoder, wherein the power converter converts an electrical power bus input of a first voltage into a power output at a second voltage for powering the loads. However, Tamai et al (herein after Tamai) teach a power conversion system comprising a load receiver receiving a control signal from a communication LAN to selectively control a power converter that converts an electrical power bus input of a first 42V voltage into a power output at a second 12V voltage for powering loads (Figure 1; col. 4, line 1+; col. 5, line 10+).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Normann's power/data system with Tamai's power converter arrangement for the purpose of selectively powering lower voltage loads based on control signals.

Normann teaches receiving the encoded signal but does not specifically disclose a decoupler for decoupling the encoded signal from an electrical power bus, wherein the decoupler electrically isolates the encoded signal from the power signal. However, Fisher et al (herein after Fisher) teach a power/data system comprising a decoupler for decoupling a data signal from an electrical power bus, wherein the decoupler electrically isolates the encoded signal from the power signal (col. 5, line 26).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Normann's power/data system with Fisher's decoupler arrangement for the purpose of decoupling the data signal from the power bus and electrically isolating the data signal from the power signal.

As per claim 8, Normann teaches an electrical power/data system comprising: a load receiver (Figure 1) for powering and controlling loads, said load receiver comprising: a communication signal containing encoded load information (col. 9, line 30); a data receiver for receiving the communication signal and deriving data therefrom; a data decoder for decoding data received from the data receiver and converting it to a control signal according to the encoded load information and powering a load based on said control signal (Figure 1; col. 7, line 33+). Normann further teaches a load transmitter for transmitting encoded load information in a communication signal onto the electrical power bus, said load transmitter comprising: a data encoder for encoding load information into data; a data transmitter for receiving the data from the data encoder and transmitting a communication signal (Figure 1; col. 7, line 55+). Normann does not specifically disclose a power converter for receiving a control signal from the data

decoder, wherein the power converter converts an electrical power bus input of a first voltage into a power output at a second voltage for powering the loads. However, Tamai et al (herein after Tamai) teach a power conversion system comprising a load receiver receiving a control signal from a communication LAN to selectively control a power converter that converts an electrical power bus input of a first 42V voltage into a power output at a second 12V voltage for powering loads (Figure 1; col. 4, line 1+; col. 5, line 10+).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Normann's power/data system with Tamai's power converter arrangement for the purpose of selectively powering lower voltage loads based on control signals.

Normann teaches receiving the encoded signal but does not specifically disclose a decoupler for decoupling the encoded signal from an electrical power bus, wherein the decoupler electrically isolates the encoded signal from the power signal. However, Fisher et al (herein after Fisher) teach a power/data system comprising a decoupler for decoupling a data signal from an electrical power bus, wherein the decoupler electrically isolates the encoded signal from the power signal (col. 5, line 26).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Normann's power/data system with Fisher's decoupler arrangement for the purpose of decoupling the data signal from the power bus and electrically isolating the data signal from the power signal.

As per claims 9 and 10, Normann teaches an electrical power/data system comprising: a load receiver (Figure 1) for powering and controlling loads, said load receiver comprising: a communication signal containing encoded load information (col. 9, line 30); a data receiver for receiving the communication signal and deriving data therefrom; a data decoder for decoding data received from the data receiver and converting it to a control signal according to the encoded load information and powering a load based on said control signal (Figure 1; col. 7, line 33+). Normann teaches the load information containing load state and load address information and setting the state of the load according to the control signal (col. 7, line 17+). Normann further teaches a load transmitter for transmitting encoded load information in a communication signal onto the electrical power bus, said load transmitter comprising: a data encoder for encoding load information into data; a data transmitter for receiving the data from the data encoder and transmitting a communication signal (Figure 1; col. 7, line 55+). Normann does not specifically disclose a power converter for receiving a control signal from the data decoder, wherein the power converter converts an electrical power bus input of a first voltage into a power output at a second voltage for powering the loads. However, Tamai et al (herein after Tamai) teach a power conversion system comprising a load receiver receiving a control signal from a communication LAN to selectively control a power converter that converts an electrical power bus input of a first 42V voltage into a power output at a second 12V voltage for powering loads (Figure 1; col. 4, line 1+; col. 5, line 10+).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Normann's power/data system with Tamai's power converter arrangement for the purpose of selectively powering lower voltage loads based on control signals.

Normann teaches receiving the encoded signal but does not specifically disclose a decoupler for decoupling the encoded signal from an electrical power bus, wherein the decoupler electrically isolates the encoded signal from the power signal. However, Fisher et al (herein after Fisher) teach a power/data system comprising a decoupler for decoupling a data signal from an electrical power bus, wherein the decoupler electrically isolates the encoded signal from the power signal (col. 5, line 26).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Normann's power/data system with Fisher's decoupler arrangement for the purpose of decoupling the data signal from the power bus and electrically isolating the data signal from the power signal.

As per claim 11, Normann teaches an electrical power/data system comprising: a load receiver (Figure 1) for powering and controlling loads, said load receiver comprising: a communication signal containing encoded load information (col. 9, line 30); a data receiver for receiving the communication signal and deriving data therefrom; a data decoder for decoding data received from the data receiver and converting it to a control signal according to the encoded load information and powering a load based on said control signal (Figure 1; col. 7, line 33+). Normann further teaches a load transmitter for transmitting encoded load information in a communication signal onto the

electrical power bus, said load transmitter comprising: a data encoder for encoding load information into data; a data transmitter for receiving the data from the data encoder and transmitting a communication signal (Figure 1; col. 7, line 55+). In addition, Normann teaches a data encoder for encoding return load information from the load; and a load return transmitter for transmitting return load data from the data encoder (Figure 1; col. 7, line 55+). Normann does not specifically disclose a power converter for receiving a control signal from the data decoder, wherein the power converter converts an electrical power bus input of a first voltage into a power output at a second voltage for powering the loads. However, Tamai et al (herein after Tamai) teach a power conversion system comprising a load receiver receiving a control signal from a communication LAN to selectively control a power converter that converts an electrical power bus input of a first 42V voltage into a power output at a second 12V voltage for powering loads (Figure 1; col. 4, line 1+; col. 5, line 10+).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Normann's power/data system with Tamai's power converter arrangement for the purpose of selectively powering lower voltage loads based on control signals.

Normann teaches receiving the encoded signal but does not specifically disclose a decoupler for decoupling the encoded signal from an electrical power bus, wherein the decoupler electrically isolates the encoded signal from the power signal. However, Fisher et al (herein after Fisher) teach a power/data system comprising a decoupler for

decoupling a data signal from an electrical power bus, wherein the decoupler electrically isolates the encoded signal from the power signal (col. 5, line 26).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Normann's power/data system with Fisher's decoupler arrangement for the purpose of decoupling the data signal from the power bus and electrically isolating the data signal from the power signal.

As per claim 12, Normann further teaches the load information containing load state and load address information and setting the state of the load according to the control signal (col. 7, line 17+).

As per claims 13 and 16, Normann teaches an electrical power system for powering vehicle loads, comprising: a load transmitter for transmitting encoded load information in a communication signal onto a vehicle electrical power bus, said load transmitter comprising: a data encoder for encoding load state and load address information into encoded data (col. 9, line 30); frequency shift keying transmitter for receiving the encoded data from the data encoder and transmitting the encoded data as an FSK communication signal; and a load receiver for controlling vehicle loads and providing said vehicle loads with electrical power, said FSK communication signal containing encoded load state and load address information, a frequency shift keying receiver for receiving the FSK communication signal and deriving encoded data from the FSK communication signal; a data decoder for decoding the encoded data received from the frequency shift keying receiver and converting it into a control signal according to the decoded load state and load address information (Figure 1; col. 7, line 33+).

Normann does not specifically disclose a power converter for receiving a control signal from the data decoder, wherein the power converter converts an electrical power bus input of a first voltage (42V) into a power output at a second voltage (12V) for powering the loads. However, Tamai et al (herein after Tamai) teach a power conversion system comprising a load receiver receiving a control signal from a communication LAN to selectively control a power converter that converts an electrical power bus input of a first 42V voltage into a power output at a second 12V voltage for powering loads; wherein the power converter sets the state of a load in accordance with the control signal when the power converter is powering a load associated with that load address (Figure 1; col. 4, line 1+; col. 5, line 10+).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Normann's power/data system with Tamai's power converter arrangement for the purpose of selectively powering lower voltage loads based on control signals.

Normann teaches receiving the encoded signal but does not specifically disclose a coupler/decoupler for coupling/decoupling the encoded signal to/from an electrical power bus, wherein the decoupler electrically isolates the encoded signal from the power signal. However, Fisher et al (herein after Fisher) teach a power/data system comprising a decoupler for decoupling a data signal from an electrical power bus, wherein the decoupler electrically isolates the encoded signal from the power signal (col. 5, line 26).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Normann's power/data system with Fisher's decoupler arrangement for the purpose of decoupling the data signal from the power bus and electrically isolating the data signal from the power signal.

As per claims 14 and 17, Tamai teaches the power converter contains being a DC-DC converter (32).

7. Claims 15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Normann in view of Tamai as applied to claim 13 above, and further in view of Swanson et al (US patent 6,624,533).

As per claims 15 and 18, the combination of Normann in view Tamai teaches a power converter to power lower voltage loads but does not specifically disclose the power converter containing an inverter. However, Swanson et al (herein after Swanson) teach a vehicle comprising a DC power bus and different types of voltage converters for powering respective load types including a DC-AC inverter to power AC loads from said DC load (Figure 3).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Norman in view of Tamai with the teachings of Swanson such that said converter contains an inverter for the purpose of powering AC loads from a DC voltage bus.

Response to Arguments

8. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

9. Art of general nature relating to remote power control has been cited for applicant's review.

Communication with PTO

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roberto Rios whose telephone number is (571) 272-2056. In the event that Examiner Rios cannot be reached, his supervisor, Brian Sircus may be contacted at (571) 272-2800, ext. 36. The fax number for Before-Final communications and After-Final communications is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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